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# **STATISTICS ON WAGES, EARNINGS, INCOME AND LABOUR COSTS**

## **A GUIDE TO THEIR CONCEPTS, MEASUREMENTS AND USAGE**

**F. PARSONS**

**AUSTRALIAN BUREAU OF STATISTICS**

**(F)**

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# STATISTICS ON WAGES, EARNINGS, INCOME AND LABOUR COSTS — A GUIDE TO THEIR CONCEPTS, MEASUREMENT AND USAGE

## Introduction

Statistics of wages, earnings and income are among the more important branches of statistics required for the planning, evaluation and monitoring of economic and social development. Sustained and heavy demand for these statistics emanates from Federal and State government advisers, social and labour market analysts, Federal and State industrial tribunals, trade unions, employer associations, employers, academics and international agencies. Comprehensive statistics on wage rates, earnings, income and labour costs, and differentials by sex, occupation, skill, industry, etc, are in such demand because of the key role they play in evaluating income and price policies, wage fixation, income re-distribution, social welfare and taxation policies, investment decisions, studies of corporate and international competitiveness and measuring living standards.

The myriad of users and uses of statistics in this area can never be satisfied with a single all-encompassing statistical measure that would meet all needs for all purposes. Under Australia's unique system of central wage fixation, statistics on wage rates, earnings, national income and related fields of employment, hours worked, unemployment, labour costs, prices and productivity come under the closest scrutiny and attention. Employees are especially concerned with the protection of living standards and with sharing equitably in national prosperity. Employers are concerned about costs, competitiveness and return on investment. Governments are responsible for the successful management of the whole economy to achieve national objectives, and for the economic, social and labour market policies which such management requires.

All of those users need the support of a sound statistical information system. For example, statistics are needed to study the relationships in the movements between award rates of pay and earnings, compensation of employees and labour costs, labour costs and prices, prices and earnings, earnings and productivity, productivity and employment, prices and income and so on. Equally, there is a need for the users of the various statistical measures to have a clear understanding of the conceptual and definitional relationship of the various statistical measures to each other.

The aim of this paper is twofold. First, to discuss the various statistical measures of wages, earnings, income and labour costs produced by the ABS and their conceptual and definitional relationships. Second, to highlight the particular strengths and shortcomings of the various measures so as to provide guidance on the suitability of the measures most appropriate for particular analyses.

## 2. Concepts and definitions

### Earnings

The statistical measure of earnings used by the ABS is based on the concept of wages and salaries as *income to the employee*. Earnings is defined as "remuneration in cash and in kind paid to employees, as a rule at regular intervals, for time worked or work done together with

remuneration for time not worked such as for annual vacation, other paid leave or holidays"\*. Employers' contributions on behalf of their employees paid to social security, health insurance and pension schemes and benefits received by employees under these schemes are excluded as are severance and termination payments and irregular bonuses which relate to a period longer than a pay period. Earnings statistics relate to employees' gross remuneration before any deductions for taxes, superannuation and pension schemes, life insurance premiums, union dues, health insurance, etc.

### Compensation of Employees

The statistical measure 'compensation of employees' is defined as "all payments by producers of wages and salaries to their employees, in kind as well as cash and of contributions in respect of their employees to social security and to private pension, casualty insurance, life insurance and similar schemes".# This measure is much wider than that for earnings, and includes irregular bonuses, severance and termination pay and employers' contributions to pension schemes and casualty insurance.

### Labour Cost

The statistical measure of labour cost is based on the concept of *the cost incurred by the employer in the employment of labour*. Labour cost comprises "remuneration for work performed, payments in respect of time paid for but not worked, bonuses and gratuities, cost of food, drink and other payments in kind, cost of workers' housing borne by employers, employers' social security expenditures, cost to the employer for vocational training, welfare services and miscellaneous items, such as transport of workers, work clothes and recruitment, together with taxes regarded as labour cost"†.

The conceptual measure of labour cost is wider than the measure 'compensation of employees' in that it embraces all of the components included in the compensation of employees measure, together with those items which are costs to the employer associated with the employment of labour but which are not part of the income flow to employees (payroll tax, recruitment and training, employee amenities and welfare).

### Income

The statistical measure of income is defined as remuneration in the form of earnings received by wage and salary earners, earnings of the self-employed and receipts by all persons derived from any of the following sources: government cash benefits (eg pensions, family allowances), worker's compensation, private pension/superannuation, interest, dividends, rent, net receipts from business, farm ownership or partnership and other sources such as scholarships, alimony, trusts and annuities.

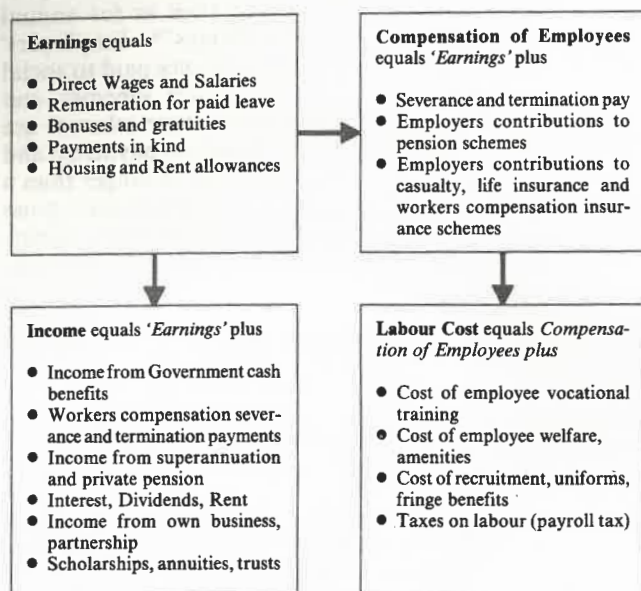
\* Resolution of the Twelfth International Conference of Labour Statisticians, ILO, Geneva, 1973.

# System of National Accounts, Studies in Methods. United Nations, 1968.

† Eleventh International Conference of Labour Statisticians, ILO, Geneva, 1966.



The definitional relationship between earnings, compensation of employees, labour cost and income measures is presented in the following diagram.



### Award Rates of Pay

Award rates provide a measure of the basic or minimum price of labour for employees in different occupations at different skill levels. The award under which the rates of pay are set also specifies the circumstances in which overtime and other penalty rates apply for hours worked additional to or outside standard hours such as shifts, weekends and public holidays. It also specifies differential loadings for skill and length of service, the length of annual paid leave and the amount of annual leave loadings.

Variations to award rates of pay will have an impact on the earnings of individuals employed under awards because the basic pay scales used by the employer to calculate the earnings of employees have changed. However, the actual earnings of employees will also be affected by factors such as the hours actually worked at award rates, the hours actually worked which are subject to various penalty rates, loadings for skill, specific site allowances, etc and any additional remuneration over and above that specified in the award borne by the employer either because of established precedents or the pressure imposed by labour market forces (i.e. over award pay).

Award rates do not represent the earnings of employees nor the labour cost to the employer.

### 3. ABS Measures of Wages and Earnings

A number of statistical measures based on the concepts and definitions discussed above have been developed by the ABS. These measures are derived from administrative records of Federal and State Industrial Tribunals and from sample surveys of employers and households. However, it has been impossible to produce measures which precisely match the concepts and definitions des-

cribed above, either because of the unavailability of data or the unsuitability of existing data to match these concepts.

This applies particularly to payments in kind. Most of these have had to be excluded from the regular earnings measures produced by the ABS. (Payments in kind cover those 'payments', such as free or subsidised housing, food, drink, company car, discounts on purchases etc which supplement earnings of individuals.) From household surveys, the *incidence* of payments in kind is measured but assessing the *value* to the employee of payments in kind is regarded as too complex to obtain from individuals with any reasonable degree of precision. The measurement of 'payments in kind' in employer-based surveys is also very difficult because of the absence of suitable records maintained by employers and the difficulty of determining an appropriate value of such benefits. For earnings statistics, payments in kind should, in principle, be measured on the basis of retail prices, but employers are able to measure more easily the value on the basis of the cost, to them of the goods and services provided. Because of these difficulties and the extra reporting burden that would be placed on employers, payments in kind are excluded from the scope of the regular employer-surveys of earnings.

### Award Rates of Pay Indexes (ARPI)

In Australia a centralised wage fixing mechanism regulates the minimum rates of pay and other working conditions of about 89 per cent of wage and salary earners who are covered by some 9,000 awards, determinations or registered collective agreements within which are over 250,000 individual award classifications. The administrative information generated provides a source for a statistical measure of trends in average minimum award rates of pay to supplement other statistical measures of actual earnings of employees, labour cost and income produced from the direct collection of data from employers and households.

Indexes of award rates of pay are published by the ABS each month. Based on a representative sample of almost 2,400 award classifications from 900 different awards, the indexes have been designed to measure *movements* in minimum award rates of pay for full-time adult male and female wage and salary earners. The indexes are updated each month on the basis of advice of award variations, and their date of effect, determined or authorised by industrial tribunals.

The indexes are constructed using fixed employment weights with the current series based on the occupational structure existing in 1976. (Prior to this date, indexes of minimum rates of pay restricted to adult male and female wage earners had been compiled and published since 1913 and had been last re-based using the 1954 Surveys of Awards and Award Occupations).

The source used to base the present indexes was the May 1976 Survey of Employee Earnings and Hours, a sample survey which obtained details on occupations,



award and award classification for 65,000 selected employees. Because the indexes are 'fixed-weight' indexes they do not reflect the effects of compositional change which have occurred in regard to the relative importance of different awards, occupations and industries since the base period.

Some award classifications include general loadings of various kinds and these are included in the indexes where they apply to *all* workers under the particular award classifications (eg the industry allowance specified in the Metal Industry Award, 1984). However, loadings that apply only when particular working conditions are present such as site, travelling, height and dirt allowances, are excluded from the indexes (eg the dirt and site allowances specified in the Building Construction Employees and Builders Labourers (Consolidated) Award, 1982).

Award variation advices received up to six weeks (3 weeks during periods of wage indexation) after the end of the reference month with a date of effect commencing in the reference month, or in an earlier month in the case of a retrospective variation, are included in that month's publication. Award variation advices received after the six (or three) week period are included as a retrospective revision in later publications of the indexes.

In summary therefore, the indexes measure general *trends* in minimum award rates of pay for adult employees covered by awards but do not measure relative *levels* of award rates of pay between States and industries and *exclude* the effect of compositional change in awards, occupations and industries over time. The indexes *exclude* awards applicable to juniors and *exclude* approximately 11 per cent of full-time adult employees not covered by awards. The indexes represent *minimum rates payable* and reflect movements from the date of effect of a variation in an award. In some cases such variations apply retrospectively.

#### *Average Weekly Earnings*

The statistical measure of average weekly earnings was developed to meet a specific need for reliable quarterly estimates of levels and movements in average earnings for Australia, States and Territories.

The introduction of a quarterly employer survey in 1981 provided the ABS, for the first time, with control over the data items and definitions used in constructing a quarterly measure of average weekly earnings. It thereby overcame most of the deficiencies of the former derived series based on payroll tax data which dated back to the early 1940's.\*

In particular, the concept of earnings defined by the ILO as "*remuneration in cash and in kind paid to employees, as a rule at regular intervals . . .*" was met by the selection of a one week period in the middle of the calendar quarter as the reference period for the survey and the exclusion from the scope of the survey of any *irregular* earnings unrelated to the reference period (bonuses, leave loadings, retrospective pay, pay in advance, severance and termination pay). For the first time, quarterly estimates of average weekly earnings for males and females were produced for full-time adult average weekly ordinary time earnings (AWOTE), full-time adult average weekly total earnings (AWOTE plus average overtime earnings) and average weekly total earnings (average earnings of full and part-time adults and juniors). However, because information obtained from employers selected in the quarterly survey has been limited to aggregate data which can be extracted from their records without imposing too great a burden, the degree of employee classification and breakdown of earnings are quite limited.

Prior to the introduction of the current survey based series, a survey introduced in 1960 and conducted in October of each year provided separate estimates of average weekly earnings and hours paid for male and female, full-time, part-time, adult and junior employees, managerial and non-managerial employees and estimates of average weekly earnings by industry. These more detailed dissections, obtained annually, supplemented those available quarterly from the payroll tax based series.

The additional data on juniors and managerial and non-managerial employees is now obtained as part of the quarterly Survey of Average Weekly Earnings which is expanded in November each year. The results are published separately from the quarterly series.

The average weekly earnings measure is based on the results of a sample survey of approximately 4,000 private employers and government agencies undertaken in respect of a specified week in the middle of the mid-month of each calendar quarter.

All wage and salary earners who received pay for the specified reference period are represented in the survey except members of the Australian permanent defence forces, employees in agriculture, forestry, fishing and hunting, private households, overseas embassies, employees based outside Australia and those on workers compensation.

The sample of employers selected from the ABS register of businesses is updated each quarter to take account of new businesses, those that have ceased operation and those which have changed as a result of takeovers and mergers.

The estimates of average weekly earnings, obtained by dividing estimates of weekly earnings by estimates of employment, do not represent the earnings of the 'average

\* For a detailed discussion of the conceptual and methodological changes associated with the replacement of the payroll tax based series with the series based on the quarterly survey of employers see ABS Information Paper: Average Weekly Earnings: New Series to Replace Former Payroll Tax Based Series (Cat. 6336.0).



person' nor even the median earnings (the level where half of recipients receive less and half receive more). The methodology under which aggregate employment and earnings are reported by employers selected in the survey does not permit the calculation of median earnings which require data collected in respect of individual employees. This information is however obtained in the Survey of Employee Earnings and Hours and the annual August household survey both of which are discussed later in the paper.

Estimates of movements in average earnings are influenced by changes in the overall composition of the wage and salary earner population represented in the survey. Several aspects can contribute to compositional changes such as variations in the proportions of full-time, part-time adult and junior employees and variations in the proportions of higher and lower paid employees arising from variations in the occupational distribution within and across industries and variations in the distribution of employment between industries.

Comparisons are frequently made between estimates of quarterly movements of average weekly earnings and corresponding quarterly movements in award rates of pay indexes. Most such comparisons give insufficient recognition to the different coverage, scope, definitions and methodology used in the construction of the two series.

In addition to minimum payments specified under awards, average weekly ordinary time earnings (AWOTE) includes a number of payments which are not included in the award rates of pay indexes (ARPI). Such payments include allowances covered under awards but which are not industry or occupation-wide in their application (such as site, travelling, height, dirt allowances and shift penalty payments) and specific over award pay. Furthermore, commissions and retainers, production bonuses and incentive and piece work payments received on a regular basis are also included in AWOTE but are not measured by the award rates of pay indexes. When the growth of these payments is different from that of other ordinary time earnings the movement in the AWOTE series will be different from that shown in ARPI.

A further variation between the two measures is caused by the effects of compositional change. The award rates indexes are unaffected by compositional change in the labour force because they are fixed-weight indexes constructed using a fixed 'basket' of awards selected in 1976 but the survey measure of AWOTE is similar to a 'variable weight' index because the characteristics of the employed wage and salary earner population whose earnings are being measured are continually changing. (As an example of this, some assessment of the impact of compositional change was made for the period February 1984 to February 1985, when it was estimated that 0.8 percentage points of the 5.9 per cent increase in weekly total earnings was caused by compositional change in the distribution of employment between industries.)

Other factors affecting comparison between the two measures are the significant number of employees (about 11 per cent) not covered by awards whose earnings are

included in AWOTE, some seasonal influence on AWOTE, the retrospective nature of some of the award determinations and different lags in the series resulting from delayed implementation of pay increases by employers.

The full extent of pay increases awarded in recent National Wage Case decisions has been reflected in the award rates of pay indexes from the date of effect of the increase but by the date of the Average Weekly Earnings survey the increase has not always been implemented by all employers. This is best illustrated by the National Wage Case decision of September 1983 which awarded an increase of 4.3 per cent with an operative date of the first pay period commencing on or after 6 October. On that occasion every union party to the award was required to give a commitment to the 'Principles' outlined in the 'National Wage Case Reasons for Decision'. This resulted in considerable lags occurring in the implementation of the increase and only part of the 4.3 per cent increase was measured by the AWE survey conducted at 16 November. Similar, though less serious, lags affected the increase in earnings measured by the AWE surveys for May 1984, May 1985 and November 1985.

#### *Distribution and Composition of Average Weekly Earnings*

The quarterly measure of average weekly earnings provides limited information about the composition of earnings and no information on occupational earnings or the distribution of earnings. To supplement the quarterly measure, statistics on the distribution, composition and occupational earnings of employees are produced from an employer-based survey introduced in 1974 and which was conducted annually, in May, until 1981. The survey was conducted next in 1983 and 1985 but has been restored to an annual frequency commencing in 1986.

Employed wage and salary earners covered by the Survey of Employee Earnings and Hours are the same as for the quarterly survey of Average Weekly Earnings. However, a much larger sample of over 7,000 employers is selected from the ABS register of businesses, and employers are required to provide data for individual employees. Selected employers with fewer than 10 employees are required to complete details for every employee while those with 10 or more employees provide data for a random sample of their employees selected in accordance with instructions provided by the ABS. Data for some 65,000 employees are obtained in the survey. Gross weekly earnings data obtained in respect of each selected employee is dissected into award or base rate of pay, over award and other pay, overtime pay and payment by measured result. Each employee is classified by sex, adult/junior, managerial/other, full-time/part-time and by occupation.

As data are obtained for a sample of individual employees statistics on median earnings, the composition of average earnings, the distribution of employees by earnings ranges and average earnings by occupation can be produced from this survey. Because the individual components of gross weekly earnings are also obtained by the survey, a direct and therefore more precise measure of over-award pay is available than that which may be derived from a comparison of the award rates of pay indexes and the quarterly average weekly earnings measure for full-time adults.



The Survey of Employee Earnings and Hours conducted in May provides a unique measure of the distribution and composition of employees' average earnings and occupational earnings. Comparability with the quarterly Survey of Average Weekly Earnings is achieved via the use of a common statistical frame from which the sample is selected (with a substantial overlap of employers selected in both surveys), a common reference date and data definitions. Both surveys are sample based, and estimates of average earnings from the two surveys may still differ because of sampling variability, non-sampling error associated with those employers not selected in both surveys and non-sampling error resulting from reporting errors undetected by ABS editing processes.

When comparisons are made between the movements in Award Rates of Pay Indexes and movements displayed by the Survey of Employee Earnings and Hours it is important to recognise that included under the survey item '*award or base rate of pay*' are allowances and penalty payments which, whilst specified in the award, are only included in the ARPI measure if they are industry or occupation-wide in their application.

In summary, the Survey of Employee Earnings and Hours is a much more sophisticated statistical vehicle than either the Survey of Average Weekly Earnings or the Award Rates of Pay Indexes in that it provides a direct measure of the size of and movements in award earnings, overaward earnings, composition of earnings and earnings by occupation which the other measures do not provide. However, for reasons of cost, timeliness and the reporting burden placed on selected employers, it is not considered practical to conduct this survey more frequently than annually. Therefore, the availability of award rates of pay indexes monthly, and the broader measure of average weekly earnings each quarter are used to satisfy the need for short-term indicators of the movements in award rates and earnings.

#### *Weekly Earnings of Employees — Distribution*

Data on earnings sought in employer-based surveys is essentially limited to that which is readily available from employers' payroll systems. As a consequence, data on the demographic and labour force characteristics of employees available from these surveys is extremely limited. The Survey of Employee Earnings and Hours goes further than other employer based surveys in obtaining details such as occupation, adult/junior, full and part-time status and hours paid for each employee, but it is to the household survey based measure of earnings that we must turn to obtain measures of average earnings and distribution classified by age, marital status, family status, birthplace and other social characteristics of employees.

In association with the Labour Force Survey conducted throughout Australia, questions are included each year in the August survey on the weekly earnings of wage and salary earners. This supplementary survey to the labour force survey introduced in 1975 includes all civilians aged 15 years and over who were employees in

their main job other than certain diplomatic personnel of overseas governments customarily excluded from census and estimated populations, overseas residents in Australia, members of non-Australian defence forces (and their families) stationed in Australia, students boarding at school, persons permanently unable to work, some patients in hospitals, inmates of jails etc and persons on workers compensation.

In this household-based survey, weekly earnings refers to the amount of 'last total pay' (before taxation and other deductions have been made) prior to the interview (conducted over the two weeks commencing the first full week in August). No adjustment is requested for the exclusion of any irregular earnings such as pre-payment for leave, back pay etc.

The statistical measure of earnings produced from this survey concentrates on the distribution of employees' earnings cross-classified by sex, age, whether working full or part-time, family status, hours paid for, birthplace, industry and occupation. Additionally, median and mean earnings are computed for each of these characteristics of employees.

The main value of this household survey-based measure lies in the range of socio-demographic characteristics obtained. Valuable comparisons and analyses can be made on the distribution of earnings especially in relation to demographic and labour force characteristics of employees. However, care needs to be exercised when comparing the means (averages) derived from these surveys with the average weekly earnings produced from the surveys of employers.

There are many factors which account for the differences between the two measures. Included within the scope of the household survey are employees in agriculture, forestry, fishing and hunting and private domestic service whose earnings are lower than the overall average. This has the effect of reducing the average earnings measure produced by this survey. In employer based surveys there is potential for underreporting of casual employees and those working very few hours (particularly if such persons are not paid through a formal payroll system). Any exclusion of such employees, who receive well below average earnings, will have the effect of inflating the 'average' produced from the employer survey.

In the household survey the lack of consultation of records by the interviewee, misunderstanding of the definition of earnings (eg reporting 'take home' pay rather than gross, pre-tax pay), earnings being reported in relatively broad ranges, lack of recognition of irregular sources of earnings and imprecision resulting from one person reporting the earnings for other household members are the underlying reasons why the aggregate measure of average weekly earnings obtained from the household survey is less accurate than that obtained from the employer surveys.

The particular value of the annual August household survey measure lies in its annual time series on the distribution of earnings and the relationship between mean (average) and median earnings and differentials by age, occupation, birthplace and other characteristics of individuals which are unobtainable from the employer-based surveys.



### *Compensation of Employees — Australian National Accounts*

The ABS measure which corresponds to the concept of 'compensation of employees' is 'wages, salaries and supplements' which is provided each quarter in the Australian National Accounts in which it contributes about 52 per cent of Gross Domestic Product.

Wages, salaries and supplements are defined as 'payments by producers to their employees in the nature of wages and salaries including allowances for income in kind (board and quarters etc) together with supplements to wages and pay and allowances of the defence forces'. Supplements consist of employers' contributions to pension and superannuation funds, direct payments of pensions and retiring allowances by employers, and amounts paid to employees as workers' compensation for occupational injuries and diseases. Data on workers' compensation claims are obtained from the Insurance Commissioner and employer contributions to superannuation funds are estimated from the results of various ABS surveys.

Estimates of wages and salaries for non-farm civilian employees are obtained primarily from the quarterly Survey of Employment and Earnings (SEE). This Survey obtains data on the monthly employment and quarterly earnings of employees in all government agencies and from a sample of about 20,000 private sector employers. Employed wage and salary earners covered by the survey are the same as in the Survey of Average Weekly Earnings. However, because the objectives of the survey are to provide detailed and reliable estimates of employment and quarterly earnings for Australia, States and Territories by *industry* a much larger sample is required for SEE than that used for the Survey of Average Weekly Earnings.

The reference period for the Survey of Employment and Earnings covers all pay periods which end in the three month period of each calendar quarter. Estimates of wage and salary payments made in the quarter cover *irregular* bonuses, *leave loadings*, *retrospective* pay and pay *in advance*, severance, termination and redundancy payments, directors or office holders fees *in addition* to those earnings included under the definitions in force for the Survey of Average Weekly Earnings (see Appendix 1). Since the ABS register of businesses from which the survey sample is selected does not provide a complete coverage of all employees an adjustment is required to the estimates of gross wages and salaries provided by the survey. This adjustment is calculated by applying an appropriate average earnings estimate to a measure of undercoverage of jobs obtained by comparing the estimates of employment from the Survey of Employment and Earnings with those from the Labour Force Survey. Because the estimates of gross wages and salaries are subject to seasonal influences and are affected by the variable number and frequency of pay periods occurring in a calendar quarter, the estimates of gross wages and salaries are seasonally adjusted and also for the varying number of pay-periods falling within the calendar quarter before the estimates are combined with the wages, salaries and allowances paid to defence forces and the 'supplements' described above to arrive at a total of wages, salaries and supplements.

Wages, salaries and supplements as defined for the Australian National Accounts departs from the United Nations' definition in one important respect. Only those payments to employees arising from workers' compensation insurance *claims* are included in lieu of the total cost of employer contributions to workers' compensation insurance schemes (see diagram, page 2). The national accounts publications do not include an explicit series of average weekly earnings. However, some users are particularly interested in a measure of average earnings from this source which they produce by dividing the estimates of wages, salaries and supplements by estimates of wage and salary earners.

The National Accounts-based derivation of average earnings is a true *quarterly* average, being based on aggregate wages, salaries and supplements for a whole quarter (rather than, for example, a specified week) and average employment for the quarter. Because supplements as well as irregular earnings, severance and termination pay are included, the derivation is a broader measure of average earnings with no separate measures for males and females, adults and ordinary time earnings.

Some of the seasonal influences that might affect the AWE survey measure have been avoided by excluding from the scope of the survey those components of earnings with a strong seasonal nature such as pay in advance and leave loadings. The selection of a one week reference period in the middle of the calendar quarter also eliminates the impact of the variable number of pay periods in a quarter from the survey series and the exclusion of certain kinds of irregular earnings such as severance, redundancy and termination pay and bonuses unrelated to the reference period results in a series which is less volatile.

When deriving an estimate of average earnings using National Accounts data it is appropriate to use only the seasonally adjusted data because of the strong seasonal variations in the 'wages salaries and supplements' series which occur from quarter-to-quarter.

The inclusion of 'supplements', irregular earnings, severance and termination pay and the inclusion of employment and earnings of members of the permanent defence forces in the National Accounts derived measure results in a seasonally adjusted average earnings level appreciably higher than that produced by the AWE survey and dissimilar quarterly and annual movements. Because of the differences in scope of the two measures (see Appendix 1) they will not necessarily exhibit similar movements.

#### **4. Other ABS Measures of Wages and Salaries**

A further measure of wages and earnings is obtained from data collected from enterprises within the scope of the ABS system of integrated economic censuses and surveys. These collections have been undertaken annually for the manufacturing, mining, electricity and gas industries and periodically for the wholesale trade, retail trade, transport and construction industries.



The main objectives of these censuses and surveys are to estimate the gross and net output of the industry, to provide data needed to study the structure of the industry and to facilitate comparative analyses between different industries and geographic areas. Gross wages and salaries data are an important component for such purposes. From these censuses and surveys, data are obtained which enable the relationships to be studied between labour input to value added or to value of turnover and other performance measures. These are basic sources of data for productivity measures — the relationship between output and labour input. However, the data on gross wages and salaries and employment are not collected in sufficient detail to serve as a reliable measure of average earnings because the data have no dissections of employment and gross wages and salaries by full or part-time, adult or junior employees.

### 5. ABS Income Measures\*

The statistical measures of wages and earnings discussed in earlier sections related to the rates of pay and earnings of employed wage and salary earners (employees). In Australia about 85 per cent of the employed population are defined as wage and salary earners and most people in this group depend entirely on their earnings as employees to support themselves and their dependents. Their earnings represent their income. However, some employees have their income from employment (earnings) supplemented by receipts from a range of other sources such as interest on savings, dividends from investments, etc.

Those persons defined as self-employed and employers who are not drawing a wage or salary from their business are excluded from the scope of the ABS earnings measures but receive income in the form of payments for professional and other services, business profits, investments etc.

The unemployed, by definition, have no income from earnings but may receive income from unemployment benefits and other social security payments. Persons not in the labour force for various reasons (the young, the aged, the sick, those with dependents etc) have no income from earnings but may receive an income in the form of a family allowance, widows pension, superannuation, aged persons pension, alimony, scholarship etc.

Clearly, 'earnings' are not synonymous with 'income' (see diagram page 2). Statistical measures of average earnings and measures of the distribution and composition of earnings are inadequate substitutes for statistical measures of income which are targeted at the total population and also include income from a number of sources other than employment.

Statistical measures of income are provided every five years from the Population Census and specific household surveys undertaken at intervals varying in frequency from three to five years.

### Population Census Income Measure

Income, in broad ranges, is obtained in the population census for all persons 15 years of age or over. Income is defined as gross income (including pensions and allowances) *usually* received weekly from all sources but no distinction is made between that income received from employment and income from other sources and no attempt is made to obtain 'income in kind'. Because income is collected in conjunction with other demographic, social and labour force characteristics of individuals, income (whether individual, family or household) can be cross-classified with those other characteristics. A limitation of the population census measure results from the recording of income in ranges with an open-ended top income range. Income statistics for families and households suffer from the usual limitations inherent in adding together values reported as ranges. No measure is available of mean (or average) income but the census measure provides a wide range of information on the distribution of the population by income and other detailed characteristics of individuals, families and households at a variety of geographic levels.

### Household Surveys Measures

Specific household surveys conducted by the ABS which include measures of annual and/or current income are Income Surveys (1968/69, 1973/74, 1978/79); the Income and Housing Survey (1981/82); Family Survey (1982); Crime Victims and Health Survey (1983) and the Household Income and Expenditure Survey (1984). From these surveys, data on a range of demographic, social and labour force characteristics of the population are available in conjunction with income.

Unlike the population census measure, the income measure produced from these surveys is further disaggregated by source of income with important distinctions made between income from wages and salary and income from a range of other sources.

### 6. Statistical Measure of Labour Cost

The Australian Bureau of Statistics has not yet produced a statistical measure of labour cost but it is possible to construct an aggregate measure based on data from the Australian National Accounts and Labour Force Surveys published by the ABS.

A comprehensive discussion of 'average real labour costs' and 'average real unit labour costs', as measured by the Commonwealth Treasury, can be found in 'Factor Shares and Real Unit Labour Costs', a Special Supplement to the October 1983 edition of the Treasury's Round-Up of Economic Statistics.

The Treasury measure 'average real unit labour costs' is defined as the ratio of average real labour costs to average labour productivity and has been prepared for the non-farm, non-farm market and private non-farm corporate sectors. For the non-farm measure average real labour costs are defined as non-farm wages, salaries and supplements, plus payroll tax, deflated by the implicit price deflator for gross non-farm product, per hour worked by non-farm wage and salary earners. Average labour productivity is defined as gross non-farm product, at average (1979-80) prices per hour worked by all persons employed in the non-farm sector.

\* Statistics on the number of taxable individuals by level of taxable income by sex, marital status and year of birth are published annually by the Australian Taxation Office.



The Department of Employment and Industrial Relations also uses National Accounts data to derive a measure of 'total hourly labour costs'. This is defined as the aggregate of non-farm wages, salaries and supplements plus payroll tax divided by total hours worked by non-farm wage and salary earners.

There are however certain limitations associated with any derived measures of labour costs based on aggregate data from the Australian National Accounts.

First, not all costs incurred by employers in the employment of labour (see Section 2) are catered for by these derived measures. In particular costs of training, social and welfare services, cost to employers of many "payments in kind", costs of safety, employee uniforms etc are not included in the "wages salaries and supplements" on which the measures are based.

Second, whilst various paid leave costs are covered (but on a payments basis rather than on an accruals basis) no distinction is possible between *direct costs* for time worked and a number of indirect costs (on-costs).

Third, the use of the national accounts 'compensation of employees' approach results in the inclusion of workers's compensation claims paid to employees in lieu of 'premiums paid by employers' which is the cost to the employer.

Under the system of central wage fixation based on wage indexation adopted in September 1983 there was a requirement that changes in labour costs which arise outside of national wage case increases should be minimal. As a consequence more attention has focussed on the non-wage component of total labour cost and the need for a disaggregated statistical measure of labour cost which is not available based on data from the Australian National Accounts.

In response to this need for a disaggregated measure of labour costs the ABS is currently examining the feasibility of collecting a range of labour cost information from employers to fill this important gap in the range of official labour statistics.

## 7. Conclusion

Statistical measures of wages, earnings and income based on data obtained from censuses and surveys of employers and households and data from administrative sources are the result of the ABS response to meet a range of user needs which have emerged progressively over a period of several decades.

Each of the measures discussed in the paper and summarised in Appendix 2 has been developed within internationally accepted standards and/or with the aim of meeting specific policy needs. Accordingly, each measure has features which make it particularly suitable for the analysis of specific labour market, social or economic phenomena. Conversely, each measure has some recognised shortcomings, be it frequency, detail of data available, population covered or data limitations imposed by the strictures of collection methodology.

Because the statistical measures have been tailored to meet specific objectives there are differences in the scope, definitions, data content and types of population surveyed. Over a given period ostensibly similar measures may not display the same indication of movement nor even the same trend.

Existing and potential users of these measures must therefore clarify the particular labour market, social or economic phenomena which they are to analyse and then select the statistical measure or measures most appropriate for their purpose.

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**SCOPE OF EARNINGS, LABOUR COSTS, INCOME MEASURES PRODUCED BY ABS**  
(+ = included, - = excluded from particular measure)

Component	Earnings		Compensation of Employees		Labour Costs	Income	
	Actual Weekly	Actual Quarterly	Actual Quarterly	Actual Annual	Current	Usual Weekly	
	Employer Survey	Household Survey	Employer Survey	Australian National Accounts	Employer Survey (proposed)	Household Income Survey	Population Census
<b>I Earnings of Employees</b>							
(1) Remuneration for time worked	+	+	+	+	+	+	+
(2) Remuneration for time not worked							
(a) Paid recreation and sick leave	+	+	+	+	+	+	+
(b) Paid public holidays	+	+	+	+	+	+	+
(c) Paid long service leave	-	+	+	+	+	+	-
(d) Retrospective pay and pay in advance	-	+	+	+	+	+	-
(e) Leave loading	-	+	+	+	+	+	-
(f) Other time off granted with pay	+	+	+	+	+	+	+
(g) 'Make-up' pay for employees on workers compensation	+	+	+	+	+	+	+
(h) Severance and termination pay	-	+	+	+	+	-	-
(3) Bonuses, gratuities, profit sharing and other allowances							
(a) Regularly received	+	+	+	+	+	+	+
(b) Irregularly received	-	+	+	+	+	+	-
(4) Food, drink, fuel and other payments in kind	-	-	-	+	+	+	-
(5) Housing benefits	-	+	-	-	+	+	+
<b>II Payments by Employers</b>							
(1) Employer contributions to superannuation, pension schemes	-	-	-	+	+	-	-
(2) Direct payments to ex-employees in form of pensions and lump sums	-	-	-	+	+	+	+
(3) Employers' payments for workers compensation insurance	-	-	-	-	+	-	-
(4) Employers' costs for vocational training	-	-	-	-	+	-	-
(5) Employers' costs for welfare, medical services and staff amenities	-	-	-	-	+	-	-
(6) Employers' other labour costs (recruitment, uniforms)	-	-	-	-	+	-	-
(7) Payroll tax	-	-	-	-	+	-	-
<b>III Personal Income From Other Sources</b>							
(1) Income from superannuation and other private pensions	-	-	-	-	-	+	+
(2) Income from government cash benefits	-	-	-	-	-	+	+
(3) Workers compensation insurance payments	-	-	-	+	-	+	+
(4) Interest, dividends, rent	-	-	-	-	-	+	+
(5) Income from own business or partnership	-	-	-	-	-	+	+
(6) Income from other sources	-	-	-	-	-	+	+



# WAGES, EARNINGS AND INCOME MEASURES PRODUCED BY ABS

Measure (ABS Catalogue Reference)	Purpose	Frequency/ Reference Period	Collection Methodology	Coverage	Scope	Attributes of Measure
<b>Award Rates of Pay Indexes (6312.0)</b>	Measurement of movements in rates of pay covered by awards.	Monthly. All variations to awards with a date of effect in the particular month.	Representative 'basket' of awards selected from the 1976 Survey of Employee Earnings and Hours is updated using variations to awards notified by industrial tribunals. Fixed weighted index is rebased at lengthy intervals.	<i>All full-time adult wage and salary earners</i> whose rates of pay are normally varied in accordance with registered award, determination or registered collective agreement. Excluded are: <ul style="list-style-type: none"> <li>• Persons covered by Defence Force Remuneration</li> <li>• Awards covering employees in agriculture, forestry, fishing and hunting</li> </ul> Approximately 11% of full time adult wage and salary earners are not covered by awards etc.	Award base rate and general loadings when applicable to all employees covered by a particular award classification. Some supplementary payments specified in some awards are also included.	Indexes for males, females by industry for States and Australia are available monthly. The indexes measure general <i>trends</i> but not relative <i>levels</i> of average award rates between States and industries.  The measure is <i>unaffected</i> by compositional change in the incidence of employees covered by various awards between successive rebasing periods.
<b>Average Weekly Earnings (6302.0)</b>	Measurement of the level of and quarterly movements in average weekly earnings of wage and salary earners.	Quarterly. Specified pay period in mid February, May, August, November.	Mail survey of 4,000 private employers and government agencies selected from ABS business register. Sample is updated each quarter. Aggregate data on employment and gross earnings is obtained from employers.	<i>All wage and salary earners who received pay</i> for the reference period except: <ul style="list-style-type: none"> <li>• members of defence forces</li> <li>• employees in agriculture, forestry, fishing, hunting</li> <li>• private household employees</li> <li>• employees of overseas embassies</li> <li>• employees based outside Australia</li> <li>• employees on workers compensation not paid through payroll</li> <li>• directors not paid salaries</li> </ul>	Total gross earnings before taxation and other deductions. Includes: <ul style="list-style-type: none"> <li>• ordinary time earnings</li> <li>• overtime earnings</li> <li>• over-award pay</li> <li>• penalty payments, shift and other allowances</li> <li>• commissions and retainers</li> <li>• payments under incentive or piecework</li> <li>• bonuses related to reference period</li> <li>• profit sharing payments if paid regularly</li> <li>• payments for leave taken during reference period</li> <li>• workers compensation payments made through payroll</li> <li>• salary payments to directors.</li> </ul> Excludes value of payments in kind.	Estimates of <i>levels</i> and <i>quarterly movements</i> are available quarterly for States and Territories and by sector for Australia.  Separate estimates are available for male and female full time and adult ordinary time earnings, full time adults, all male and all female earnings.  Estimates of average weekly earnings for other characteristics of employees are not available.  Averages are <i>affected</i> by compositional change in the labour force.  Estimates are subject to sampling variability.
<b>Distribution and Composition of Average Weekly Earnings (6306.0)</b>	Measurement of the distribution of wage and salary earners by levels of average weekly earnings and composition of average weekly earnings for various categories of employees and principal occupations.	Annually (to 1981) 1983 1985 Annually (from 1986)	Mail survey of 7,000 private employers and government agencies selected from the ABS business register.  Selected employers provide data for a selected sub sample of individual employees. Data for about 65,000 individual employees is obtained in the survey.	Same coverage as for 'Average Weekly Earnings'	Same scope as for 'Average Weekly Earnings'	Estimates of average weekly earnings are provided for Australia, States and Territories dissected into award or agreed base rate of pay, overtime, overaward pay and pay by measured result.  Employees are classified by sex, full and part time, adult/junior, managerial and non-managerial.  Estimates are provided on the distribution of employees by levels of earnings and estimates of average weekly earnings are available for individual occupations, grouped occupations and by industry.  Estimates are subject to sampling variability.

<b>Weekly Earnings of Employees — Distribution</b> (6310.0)	Measurement of the distribution of wage and salary earners by levels of weekly earnings according to various social and demographic characteristics	Annually, in August	Household survey based on personal interview with any responsible adult. Data for about 32,000 wage and salary earners is obtained in the survey.	<p><i>Persons 15 years of age and over who were wage and salary earners in their main job except:</i></p> <ul style="list-style-type: none"> <li>• members of defence forces</li> <li>• certain diplomatic personnel</li> <li>• overseas residents temporarily in Australia</li> <li>• members of non-Australian defence forces in Australia</li> <li>• students boarding at school</li> <li>• persons permanently unable to work</li> <li>• certain hospital patients and inmates of gaols</li> <li>• persons on workers compensation</li> </ul>	<p><i>Amount of last total pay</i> (before taxation and any other deductions) for the period prior to the survey</p> <ul style="list-style-type: none"> <li>• includes back pay, pay in advance, leave loadings and any irregular or infrequent bonuses or commissions received.</li> </ul>	<p>Comparisons and analyses of distribution of employees by earnings levels in relation to demographic characteristics of sex, age and marital status, family status and other labour force characteristics of hours paid for, occupation and full/part time status.</p> <p>Estimates are subject to sampling variability.</p> <p>Evidence of incomplete reporting of all earnings.</p> <p>Not suitable as a short term indicator of movements in average earnings.</p>
<b>Compensation of Employees</b> (Australian National Accounts — Wages, Salaries and Supplements) (5204.0)	Measurement of the labour factor share of Gross Domestic Product and Household Income	Quarterly, Calendar Quarter	Estimates of quarterly gross wages and salaries paid to civilian employees are obtained from a mail survey of 20,000 private employers and <i>all</i> government agencies. Defence force wages and salaries are obtained from Department of Finance. Data on workers compensation claims are published by the Insurance Commissioner and employer contributions to superannuation funds are estimated from the results of various ABS surveys.	Same coverage as for 'Average Weekly Earnings' but includes employees of government enterprises mainly engaged in agriculture, forestry, fishing and hunting.	<p><i>All payments to civilian employees</i> for pay periods which ended in the calendar quarter. Includes all payments within the scope of the 'Average Weekly Earnings' measure plus:</p> <ul style="list-style-type: none"> <li>• payments for leave loadings</li> <li>• all bonuses and profit sharing payments paid in the quarter</li> <li>• pay in advance and retrospective pay</li> <li>• severance and termination pay including pay in lieu of unused paid leave</li> <li>• directors or office holders fees</li> </ul>	<p>Necessary for constructing the Australian National Accounts measure of Gross Domestic Product where 'Wages, Salaries and Supplements' contribute about 52 per cent.</p> <p>Measure is subject to large seasonal variations particularly in December and March quarters and is therefore seasonally adjusted.</p> <p>Can be used to construct a derived measure of total labour costs.</p> <p>Can be used to construct a derived measure of average earnings but no dissections by sex or categories of employees.</p>
<b>Gross Wages and Salaries in Manufacturing Industry</b> (8203.0)	Measurement of the gross and net output of the industry.	Annually 12 months ending 30 June.	Census of establishments conducted by mail.	<i>All establishments predominantly engaged in manufacturing activities</i> and separately located administrative offices and ancillary units serving the manufacturing establishment.	<p><i>Gross wages and salaries paid for 12 month period</i> but excluding:</p> <ul style="list-style-type: none"> <li>• drawings of working proprietors and partners</li> <li>• director's fees</li> <li>• car, entertainment and similar allowances</li> <li>• provisions for future liabilities e.g. long service leave</li> </ul>	<p>Measurement of the relationship between labour input to the value added or gross value of output.</p> <p>Not suited as basis for measure of average earnings because restricted to annual data and no dissection by male, female and other characteristics of employees.</p>
<b>Gross Wages and Salaries in Mining Industry</b> (8402.0)	Measurement of the gross and net output of the industry.	Annually 12 months ending 30 June.	Census of establishments conducted by mail.	<i>All establishments predominantly engaged in mining activities</i> and separately located administrative offices and ancillary units.	Same scope as for the Manufacturing Industry.	See comments under 'Manufacturing Industry'.



## WAGES, EARNINGS AND INCOME MEASURES PRODUCED BY ABS—(continued)

<i>Measure (ABS Catalogue Reference)</i>	<i>Purpose</i>	<i>Frequency/ Reference Period</i>	<i>Collection Methodology</i>	<i>Coverage</i>	<i>Scope</i>	<i>Attributes of Measure</i>
<b>Gross Wages and Salaries in Wholesale, Retail Construction and Transport Industries</b> (8638.0, 8622.0, 8711.0, 8712.0, 8713.0)	Measurement of the gross and net output of the industry.	Irregularly 12 months ending 30 June (Wholesale 68/69 81/82 Retail 79/80 85/86 Construction 78/79 84/85 Transport 83/84)	Census or Census/Survey conducted by mail.	<i>All establishments predominantly engaged in the particular industry and associated separately located administrative offices and ancillary units.</i>	Same scope as for the Manufacturing Industry.	See comments under 'Manufacturing Industry'.
<b>Income (Annual and Current) (6502.0)</b>	Measurement of the total income from all sources.	Various household surveys conducted in 1978/79 1981/82 1982 1983 1984	Household survey based on personal interview with <i>each</i> household member aged 15 and over. Size of surveys range between 20,000 and 70,000 persons.	Same coverage for 'Weekly Earnings of Employees — Distribution' but includes persons 14 years of age and over.	<i>Income from all sources</i> including income from: • wages and salary • own business, farm etc. • government cash benefits • superannuation • interest dividends, rent • other sources such as scholarships, trusts, regular income from a will etc. Excludes value of payments 'in kind', tips and gratuities.	Current and annual income by source of income for various demographic, social and labour force characteristics of individuals, and families.
<b>Income (Usual Gross Weekly or Annual) (2151.0)</b>	Measurement of total income from all sources.	5-Yearly No specific reference period.	Census of Population Self-enumeration questionnaire completed by householders and/or individuals. Income reported in ranges.	All persons resident in Australia on 'Census Night'.	<i>Income from all sources</i> including: • wages, salaries, overtime • family allowances • pensions, superannuation • tips and gratuities • business or farm income • unemployment benefits	Individual, family and household income cross classified with any of the other topics included in the census.  Statistics on income for small geographic areas.  Some approximation results from reporting of income in ranges only.